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ABSTRACT

Vocational education (VE) in Switzerland is characterized by diversity and pragmatism and is shaped by the country's geography, political system, economy, and culture. Roughly two-thirds of all Swiss youth participate in some form of vocational training at the upper secondary level. Vocational certificates and higher vocational certificates can only be taken after several years of job experience. Apprenticeship is the predominant form of VE in Switzerland. In terms of quantity, the most important sectors for VE are industry, crafts, trade, banking, insurance, transport, restaurants and hotels, the other service sectors, and home economics. Switzerland's Federal Vocational Education Act regulates vocational training in those sectors. VE falls under jurisdiction of the Federation Department of Economic Affairs. The original form of training in apprenticeships consisted of two learning venues (the firm where apprentices trained and the vocational school) and was called the dual system. In 1980, the "triad system" was established. It includes training in a firm, attendance at a vocational school, and compulsory "introductory courses." VE opportunities for special needs people include elementary training schemes for young people with "more practical abilities" and special programs for gifted students at advanced vocational schools. Vocational schools are funded almost exclusively by the state, but training centers and apprenticeships are subsidized by professional associations and firms. (MN)

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The National Dissemination Center

Presents

"Swiss Vocational Education: Facts, Figures and Prospects"

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Swiss Pedagogical Institute for Vocational Education
(SPIVE)
Bern, Switzerland

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Curriculum

Kurt Haefeli is a psychologist (PhD from the University of Zürich, Switzerland, 1981; BA from the University of Michigan, Ann Arbor, 1974; Diploma from Wayne High School, Dayton, Ohio, 1970). He has been working at the University of Zürich for 10 years, doing research on vocational development (e.g. a 4- year-longitudinal study on the effects of apprenticeship on different aspects personality of young people). Then he has been involved in the field of adult and continuing education (working in state and private organizations). For the last five years Haefeli has been a member of the faculty of the Swiss Pedagogical Institute for Vocational. He is head of the section „Research and Development".

Research and scholarly interests

- Transition school-to-work, connections between the workplace and formal education
- Gender differences in vocational education and vocational careers
- General issues of vocational education; „comparative" vocational education (in different cultures)
- School improvement and school effectiveness (especially for high schools and colleges)

Swiss Pedagogical Institute for Vocational Education (SPIVE)

The SPIVE is primarily a School of Education where teachers for secondary vocational schools are being formed. It is part of the Federal Office for Professional Education and Technology. At the institute about 250 students are enrolled and more than 60 persons (25 faculty members) are employed. There are three campuses (one in each linguistic region of Switzerland); for more information see „www.sibp.ch".

Some recent publications

Gender Perspectives on Vocational Education. Bern: P. Lang (in print). (together with Gonon, Ph., Ludwig, I. & Heikkinen, A.)

Berufsfelddidaktik – eine vergleichende Perspekti ve. Hohengehren: Schneider, 2000. (together with Wild- Naef, M. & Elsaesser, T.)

Apprenticeship and personality development: A longitudinal study. The German Journal of Psychology, 1989, 13 (1), 62-63 (together with Kraft, U. & Schallberger, U.)

Berufsausbildung und Persoenlichkeitsentwicklung: Eine Laengsschnittstudie. Bern: Huber, 1988. (together with Kraft, U. & Schallberger, U.)

Swiss Vocational Education: Facts, Figures and Prospects

The Swiss system of vocational training is similar to the German and Austrian systems. It is a "dual" system, i.e. the apprentice's training is divided between two bodies: the employer and the vocational school. The employer's task is to teach the apprentice practical skills, while the vocational school teaches him or her the necessary theory relating to the chosen field, as well as general subjects.

The federal law on vocational training applies to some 260 occupations in industry, trades, commerce, domestic service; agriculture and forestry (and in the future also to health care, social works and applied arts).

Young people go into basic vocational training after completing their compulsory education. At present, from the age of 16, two thirds of the young population who leave lower secondary schools go into apprenticeships of which most last for 3 or 4 years. The less academically gifted children may go into "elementary vocational training" (employment with a company plus vocational school) which lasts 1 or 2 years.

In the "dual" system the apprentice does not pay any fees. The vocational courses are free for anyone who has an apprenticeship contract which is approved by the cantonal authorities. The apprentice goes to school one or two days per week and for 40 weeks of the year during his or her training. The scope of vocational training courses, the subjects taught and the number of lessons are fixed for each profession in close collaboration with the corresponding professional association, within the framework of a program drawn up by the Federal Office for Professional Education and Technology. The schools teach the basic theory which the apprentices will need for their chosen career, as well as general subjects.

The apprentice's practical training with a company is also regulated by federal legislation. Each apprentice works under the guidance of a master. In the "dual" system most of the practical training consists of taking part in the normal activities of the company. Apprentices are paid a monthly salary.

At the end of their basic training the apprentices take a final examination. If they are successful they are awarded a Federal Apprenticeship Certificate (CFC) which is recognised all over the country. The final examination comprises a practical part, and two theoretical parts - one technical, the other general

Since the vocational schools are financed mainly by the cantons, the latter are also responsible for employing teaching staff. The future teachers are generally trained at the Swiss Pedagogical Institute for Vocational Education, which is a federal institution.

The people put in charge of the apprentices for their practical work must have several years' experience in their trade and take a special course for training apprentices, organised by the professional associations or the cantons.

In recent years the Swiss vocational education system has been critized as not being flexible enough to meet the challenges of a globalized economy. The young people themselves are increasingly more interested in attending a school that prepares for University Entrance Certificate instead of doing an apprenticeship.

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VOCATIONAL EDUCATION IN SWITZERLAND

Facts, figures and prospects[1]

Dr. Kurt Haefeli
Swiss Pedagogical Institute for Vocational Education[2]

Paper presented at the National Dissemination Center for Career and Technical Education
The Ohio State University, Columbus, Ohio
August 2000

1 General information

2 A survey of the Swiss educational system

3 The vocational education system

4 Prospects

[1] This paper is largely based on the following publication: Wettstein, Emil: Vocational Education in Switzerland. Luzern: Deutschschweizerische Berufsbildungsämter-Konferenz, 2000. I wish to thank E. Wettstein for letting me use much of his material.

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1. GENERAL INFORMATION

1.1 Introduction

Two factors have made their mark on vocational education in Switzerland: Diversity and pragmatism. Both contribute to the quality of our vocational education. Where two cultures with a Germanic and Latin influence meet, there is a need for impartial openness to varying solutions. The development of the modern economy likewise leaves little room for inflexible schemata. Rather, it requires solutions that are suited to the region and to technology.

One of the central issues has become a re-examination of the legal foundations: We are in the process of taking the changing educational needs and profiles of activity into consideration, of defining guidelines for new types of programs. In particular, the traditional separation into commercial-industrial, social and health care programs should be done away with. The guiding principle will continue to be providing flexible opportunities for training that are based on the strengths of the various models in use, rather than establishing requirements that are meant to be as uniform as possible.

In order to understand how the Swiss educational system works, some of the geographic, political, economic and cultural characteristics of the country need to be explained.

1.2 Structures

Switzerland is geographically dominated by the division into three areas: the Alps, Central Switzerland and the Jura. Approximately 12% of Switzerland's land surface of 41'284 km^2 belongs to the Jura, 23% to Central Switzerland (between the Jura and the Alps) and 65% to the Alps in the southern part of the country. However, only 20% of the total population live in the Alps.

Switzerland has a population of 7 million inhabitants. 19% are foreigners (mostly from Italy, Ex-Yugoslavia and Spain).

Politically, the country is divided into 26 cantons, each of which has a large degree of political autonomy, especially in terms of how its educational system is organized. 64% of the population speak Swiss German as their native language (see graph), 19% speak French, barely 8% Italian and 0.6% Romansch (found primarily in the Grisons). A further 9% have a different native language.

Similar to other highly developed industrial nations, Switzerland's earning and production structure is dominated by the service sector (cf. graph). Small businesses play a major role in the economy. Only 176 businesses employ more than 1000 people (1995).

The most important branches of production are machine construction and the metal industry with 19% of the employees in the industrial sector (4th quarter 1997), the manufacture of electronic, electrical and precision mechanical devices (together 12%), as well as the chemical and pharmaceutical industries (6.5%). Not only commerce and transport are of major significance for the service sector (one third of the people in this sector are employed here); health care, services for enterprises and the restaurant and hotel trade also play a major role.

1.3 The political system

The Swiss Confederation, which was founded in 1291, has been a federal state since 1848. Some typical characteristics are:

- Federalism and communal autonomy. The cantons existed before the federal government did. In 1848, the cantons created the Swiss Confederation and assigned areas of responsibility to it that exceeded the capacities of the individual cantons. Until today public education has remained under canton al authority.
- The exceptionally broad range of civil rights: Swiss citizens not only elect representatives to the national and cantonal parliaments, the cantonal governments and the most important communal authorities, they can also vote several times a ye ar on various issues.
- The government at all levels is an expression of political consensus. For example, the administration at the national level is composed of representatives of the four largest political parties. These parties provide the seven members of the Executive Federal Council and together they have three fourths of the seats in the Swiss Federal Parliament.

2. A SURVEY OF THE SWISS EDUCATIONAL SYSTEM

In accordance with Switzerland's federalistic principles, all of those powers that the Con stitution does not expressly delegate to the federal government fall under the jurisdiction of the cantons. The national government may only take action in those areas stipulated by the Federal Constitution.

As a result, the Swiss Federal Constitution do es not provide any legal framework for a uniform reg mentation of the educational system. The cantons have the main jurisdiction over schools. The federal government so far only regulates vocational education in industry, commerce, trade, agriculture and home economics (but in the future also in health care and social works).

2.1 The structure of the educational system

The following types of schools can be found in Switzerland (see graph):

- Noncompulsory pre-school at a **kindergarden**
- **Compulsory public education** which lasts 9 years, usually beginning the year the child turns 7
- To prepare for professional training, many young people go to **intermediate programs** such as introductory courses, integration courses, and career orientation courses, for example by attending a 10th year of school
- **Vocational training**, usually in the form of an apprenticeship in an enterprise lasting three to four years, sometimes with attendance at an advanced vocational school
- Schools that prepare for the **University Entrance Certificate** [Matura] and intermediate diploma schools [Diplommittelschulen] of short duration, often to prepare for social and health careers, teacher training institutes (but now only in a few cantons)
- **Universities**: Specialized colleges, universities and two Fed eral Institutes of Technology (in Zurich and Lausanne), teachers' colleges
- Specialized colleges and **higher vocational schools**, for example technical schools and commercial business schools; courses to prepare for vocational and higher vocational certificat es; the recently created **Universities of Applied Sciences**
- **Further and continuing education**: courses, programs of a job -related or more general nature, retraining.

Towards the end of their compulsory schooling, young people in Switzerland have to decide what they want to do. Career counseling is usually part of the curriculum at the lower secondary level. Individual career counseling, which is noncompulsory, free and provided by an independent public institution, is also a help, as are career choice progra ms during an intermediate year.

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2.2 Upper secondary schools

A great majority of young people voluntarily attend some form of further education after finishing public school. 93% of the young people (95% of the men and 90% of the women, 1995) finish a school at the upper secondary level (see graph). Most of the young people then join the work force - usually at the age of 19 to 21 years - others continue their education at a post -secondary level.

Roughly two thirds of the young people do some form of vocational training at the upper secondary level, usually in the form of an apprenticeship. 17% attend schools that prepare them for the University Entrance Certificate (Matura) and 6% attend other general education schools.

The figures on schooling show that over the past years there has been a shift away from vocational education towards different forms of schools offering more general education.

2.3 The post-secondary level

The post-secondary level begins either immediately after completion of the upper secondary level or following a few years of work experience. In international comparison, not very many men and even fewer women continue with post-secondary education in Switzerland. This will change in the coming years because the higher vocational schools have been upgraded to Universities of Applied Sciences.

Admission to the Universities of Applied Sciences requires a completed apprenticeship together with an advanced level vocational diploma (Berufsmaturität). People who have a University En trance Certificate can also be accepted if they have obtained relevant professional experience beforehand.

Vocational certificates and higher vocational certificates can only be taken after several years of job experience. The trade associations determine the prerequisites for the examinations, which in turn must be approved by the state. Private and public schools offer preparation courses, which can usually be attended part - time and last several years.

2.4 Further education

Adult education, not only job-related but also for general knowledge, is now playing an increasingly important role in education policy. There is a broad choice of courses, offered by both private and state -run institutions.

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3. THE VOCATIONAL EDUCATION SYSTEM

3.1 Introduction

This section gives a more detailed description of those parts of the educational system that concentrate on training to prepare for working life, training while working and further professional training.

As a result of historical developments and - until recently - the lack of a common foundation in the Constitution, several quite different systems of vocational education have evolved.

The predominant form of vocational education is the apprenticeship (see graph): on -the-job training in a firm which is accompanied by attendance at a vocational school (dual system) or by attending a vocational school and an introductory course (triad system). Some occupations can be learned either through an apprenticeship or by attending a specialized trade school or a training workshop program.

Full-time vocational schools are more common in the western part of Switzerland and in Ticino than in the German-speaking part. This is a reflection of different traditions. Although the Swiss vocational education system is based on a dual system, similar to Germany and Austria, the French -speaking and Italian-speaking parts of the country are influenced by their neighbors France and Italy, where vocational education is oriented more toward attending school.

In terms of quantity, the most important sectors for vocational training are industry, the crafts, trade, banking, insurance, transport, restaurants and hotels, the other service sectors and home economics (see graph: 10 most important occupations by gender). Vocational training in these sectors is regulated by the Federal Vocational Education Act.

The health care sector (nursing, midwives, medical therapy and medical technology) is another important part, especially for young women. The cantonal public health authorities have delegated the job of regulating, supporting and controlling the training in most of these professions to the Swiss Red Cross. The training institutions (for example health care schools) are responsible for training. They work together closely with the institutions where internships take place (mostly hospitals).

3.2 The history of vocational education

Vocational education as it is known today was created at the end of the 19th Century. One hundred years before, the French Revolution destroyed the traditional form of training that went back to the Middle Ages and

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was regulated by guilds. In the middle of the 19th century, Swiss enterprises were confronted with international competition for the first time because of free trade agreements (liberalism!) and improved transportation (railways!).

For the emerging machine factories, banks and commercial enterprises, these new conditions were a challenge that they met successfully. On the other hand, the trades were hurt by international competition because their structures were outmoded and their employees insufficiently trained.

For this reason, in 1884 the Federal Parliament decided to support (and consequently also to regulate to a certain degree) the 'crafts and trade schools' as a measure to promote the economy, thus making the trades more competitive again. The schools were set up in much the same way as today with two groups of subjects (occupation-related subjects and general subjects).

The federal government received further powers - such as establishing training regulations - through an amendment to the Federal Constitution in 1908, which permitted it to "set up uniform regulations for the trades". However, at first the promotion of practical training remained in the hands of the trade associations, until a first 'Federal Law on Vocational Education' was passed in 1930. This law charged the Swiss federal government with the regulation of practical and theoretical education. Final examinations for apprenticeship certificates and attendance at voca tional schools were declared obligatory for apprentices.

Vocatic al education did not really get a boost until after World War II (see graph). At this time, more and more of the population began to consider it normal for boys and girls leaving the compul sory schools to continue their education at an upper secondary level, be it in an apprenticeship, at a trade school or at a school preparing for the University Entrance Certificate.

The Vocational Education Act was revised in 1963 and in 1978. A further revision is under way right now.

3.3 Legislation and implementation

As legislation on vocational education is based on an article in the Federal Constitution concerned with the national economy, the federal government's powers were until recently limi ted to education and further professional development for occupations belonging to industry, the crafts, the trades, agriculture and domestic services. Consequently, vocational education falls under the jurisdiction of the Federal Department of Economic Affairs (see graph).

In 1999 the Federal Constitution was revised and a sound basis for extending federal competence to regulating and supporting vocational education in all areas of professional life was created (including social and artistic fields and the health care professions).

Apart from the Vocational Education Act, sections of the Swiss Law of Obligations are of major importance for vocational education. According to Swiss law, the contract of apprenticeship is a special form of employment contract, thus falling under the jurisdiction of civil law.

The Federal Office for Professional Education and Technology (BBT), which is under the Federal Department of Economic Affairs, works together with industrial organizations to establish the training an d examination regulations for individual occupations and to create the syllabi for the vocational schools.

The cantons have set up their own Offices of Vocational Education to implement the Vocational Education Act. These offices are especially concerned with the vocational schools, supervising the apprenticeships and organizing and carrying out the final examinations for the apprenticeship certificates.

The authorities' most important partners are employers' associations and labor organizations, which include, on the one hand, the top organizations (the Swiss Employers' Association, the Swiss Trade Association, the Swiss Federation of Labor Unions) and, on the other hand, professional associations. The professional associations - usually those of the employers - submit proposals for new or revised training regulations and usually also formulate the examination questions on behalf of the authorities. According to law, they are also charged with working out so-called model training programs to promote the systematic training of the apprentices. In addition, representatives of the associations belong to all of the pertinent supervisory boards, examining boards, working groups, etc., whereby parity between labor representatives and employers' representatives is taken into consideration.

Some of the organizations also create teaching materials. The responsible authorities can also entrust them with the realization of the final examinations for the apprenticeship certificate.

3.4 The dual and triad system

The original form of training in an apprenticeship consisted of two learning venues (dual system): the firm where the apprentices were trained and the vocational school. During the first half of this century, the amount of time spent at a vocational scho ol increased from half a day to one or two whole days a week. The Vocational Education Act designates a maximum of two days of school. Included in this is attendance in electives and remedial courses (see graph).

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Since 1980, it has become compulsory to attend 'introductory courses'. As a result, most apprenticeships also include a systematic introduction to the basic skills needed for a particular occupation in programs held outside the firms. These introductory courses usually take place in off- the-job training centers, which are run by trade associations and are independent learning venues. Consequently, this system is called the "triad apprenticeship".

What makes the apprenticeship special in educational terms are its two -fold objectives: To provide both training *and* knowledge, qualifications *and* personal development: According to Article 6 of the Vocational Education Act, basic training provides "the skills and knowledge necessary to perform an occupation. It broadens general knowledge and promotes personal development and a sense of responsibility. Furthermore, it provides the foundations for continuing education, both professional and general."

3.4.1 On-the-job training

Practical training takes place in the firm. Many firms share this job in "training alliances". Large firms move many of the training tasks to their own training workshops, training laboratories, practice offices or internal schools. This is not only common for industry, but also for stores, large banks, insurance companies or restaurant chains, for example. However, real tasks are always used to deepen and practice what has been learned, although the proportion of training time spent on them may vary greatly (see graph).

The contract of apprenticeship is a special kind of private law employment contract. It is only valid once it has been approved by a cantonal Office of Vocational Education. However, regulation and supervision are limited to aspects that are relevant to the training program. For example, how much the apprentice earns (wages) is not regulated; the apprentice must negotiate this with the firm where he or she plans to train, although many professional associations do provide guidelines.

On-the job trainers are either the owners of the firms themselves or more commonly other professionals with job experience. Each trainer has to attend a training course of at least 40 hours that has a curriculum that complies with what the federal government has determined to be necessary. The courses are usually offered by the cantons and professional associations. They may also be integrated in a program to become a "master". There is no final examination for this.

3.4.2 Introductory courses

In the training centers that run introductory courses, the courses are taught in blocks of three or four days a week. Depending on the profession, they last 2 to about 20 weeks, distributed over all of the years of the

apprenticeship. In the training centers where they are held, the teachers are either full -time trainers or professionals who have been hired part-time by the institutions - especially for those occupations where there are only a few apprentices. The trainers merely need to have the training required to become a "master". More extensive teacher training is voluntary.

3.4.3 Courses at vocational schools

Every apprentice must attend a vocational school, which is free of tuition. Courses at vocational schools are held in classes of 10 to 24 students. The goal is to have classes of apprentices in the same occupation and at the same level. However, because there are more than 200 possible occupations, it is not easy to achieve this goal. As a result, for some occupations the students attend so -called intercantonal trade courses or specialized courses that are held in blocks.

Usually classes are held on one to two school days a week with 8 or 9 lessons per day. For many years there has been some experimentation with block courses, but this type of course organization has not become established yet. In some occupations, however, attendance at a vocational school is intensified in the first year and gradually reduced towards the end of the apprenticeship.

In most cases, vocational schools are financed by the cantons or the communities. But associations often run their own schools as well: Most of the commercial business schools are run by local business associations (employees' associations). Some of the trade associations also train their next generation themselves, e.g. for occupations like plasterer, roofer.

Similar to the training that takes place in the firms and in introductory courses, the courses at vocational schools are oriented to the occupation to be learned. The so -called specialized courses (5 to 14 lessons per week) are supplemented by classes in "General Knowledge", which are independent of the occupation being learned. They are held for three lessons each week and serve as an orientation help for young adults in their current situation as apprentices. The development of language skills and a certain foundation of general knowledge (legal rights, work, family, environment, etc.) form the basic curriculum. The teachers strive to achieve independent, self-responsible and self-determined learning. In order to realize this, the teachers are given a great degree of freedom. Lessons in physical education supplement every day at school.

Engineers and masters with supplementary training at the Swiss Pedagogical Institute for Vocational Education (SPIVE/SIBP) teach the specialized classes. Academics and teachers from the primary and secondary level are trained at the SPIVE or at the university to teach the classes in general knowledge. At business schools most of the teaching is generally done by teachers, who get their training at a university. In addition, there are teachers for physical education, languages, etc.

3.4.5 Final examinations

Basic training ends with the final examination for the apprenticeship certificate, consisting of a test on workmanship quality (practical work), which is held at the apprentice's firm or in special localities, an examination in theory related to the occupation and an examination in general knowledge. Depending on the occupation and the subject, the grades the apprentice has achieved at the courses in the vocational schools are also taken into consideration. The examination is under the jurisdiction of the cantons and is run by groups of experts. Each year approximately 20,000 experts from trade and industry participate in the examinations. In some regions and for some occupations a professional association organizes the examination under commission of the canton or the federal government.

Whenever possible, the examination questions are formulated uniformly for a whole language region. After passing the examination, the apprentices are awarded a "Federal Certificate of Competence", with a supplementary page listing their grades. In addition, the firm where the apprentices were trained gives them a Certificate of Employment for the period of their apprenticeship.

3.5 Training for special groups of people

3.5.1 Elementary training

The elementary training scheme [Anlehre] was created in 1980 for "young people who primarily have more practical abilities". Similar to regular apprentices, the apprentices doing elementary training work in a firm and attend special classes at a vocational school one day a week. However, only 1 -2 percent of all apprentices are enrolled in an elementary training program. Nonetheless, it has become established as an important opportunity for those young people who are scholastically weak to get some professional training.

3.5.2 Gifted students at advanced vocational schools

Advanced vocational schools [Berufsmittelschulen] offer talented and motivated apprentices "a broader general education in addition to the compulsory subjects for professional and personal development, also giving them the skills they need to enter more demanding programs later".

In order to prepare for an advanced level vocational diploma [Berufsmaturität], the students do an apprenticeship in a firm or a training center and attend a vocational school. However, they go to school half a

day or one whole day longer than the other apprentices. During this extra time at school, they attend courses in general subjects according to a special c urriculum.

In addition to the final examinations for the apprenticeship certificate, the students also have to pass a further final examination, the successful completion of which is prerequisite for receiving the advanced level vocational diploma [Berufsmaturität], which gives them the right to attend the Universitites of Applied Sciences, among other things.

3.6 Funding, costs

Vocational schools are funded almost exclusively by the state: The federal government covers 10 - 30 percent, the remainder is either covered solely by the canton or shared between the canton and the community. Professional associations contribute by financing materials and courses for continuing education (see graph).

The training centers where introductory courses are hel d are usually run by trade associations. The expenses are shared by the state and the associations. In addition, the firms that send apprentices to these programs have to contribute to the funding, which can often amount to several thousand Swiss francs pe r apprentice over the years of their training.

At the moment, possibilities for easing the burden of the master tutors in the firms are being discussed with the objective of promoting greater willingness to take on apprentices. For the time being, howeve r, the training in the firms will continue to be completely financed by the firms themselves and the people in training. These people make a substantial contribution to covering the costs through their work. The ratio between costs and earnings varies greatly from enterprise to enterprise and from branch to branch. According to recent studies (Hanhart 1998), the yields cover the costs for small enterprises. In large enterprises, on the other hand, the costs exceed the quantifiable yields by ten to twenty th ousand Swiss francs per apprentice and year. However, it has not been taken into consideration that some savings or yields are not directly reflected in these figures, for example that the costs for hiring personnel are lower and that when apprentices are hired after their apprenticeship less time is needed for training, or that the young people have a positive effect on the atmosphere in offices and workshops.

4. PROSPECTS

The Swiss attach great significance to vocational education, especially in the form of the apprenticeship. The apprenticeship is considered to be especially

- well-suited to young people because of the combination of working at a job and attending school and the fact that learning takes place through doing real task;
- flexible in that it allows ongoing adjustment to the changing needs of industry and society;
- reasonable in terms of cost: an apprentice only costs the state a fraction of what a student preparing for the university does;
- workforce-oriented: young people having finished their vocational training can immediately begin working productively in their special fields (many of the people finishing their apprenticeships are offered a job by the firm they are doing their training in);
- career-oriented: the completion of an apprenticeshi p offers many career possibilities such as continuing education in specialized colleges and advanced vocational schools, vocational certificates, higher vocational certificates and the Universities of Applied Sciences (prerequisite is a certificate of an advanced vocational school).

On the other hand, a number of critical points have been raised recently:

- Lower attraction: The young people themselves – or their parents – are increasingly more interested in attending a school that prepares for the Universit y Entrance Certificate instead of doing an apprenticeship. Social prestige may play a major role or the fact that young people wish to postpone making definite career decisions.
- Social problems: Young people with scholastic or social deficits, especially in the cities or suburbs and with a foreign background, have increasing difficulty of finding an adequate apprenticeship.
- Inflexibility: Like many other countries Switzerland is shifting from a manufacturing- to a service- and information-based economy. These trends have important implications for vocational education. The question remains open whether the Swiss vocational education system is flexible enough to adjust to the necessary changes.

LITERATURE

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Further literature, links to the most recent statistics, current addresses and other information about vocational education can be obtained through internet. Current links can be found under www.berufsbildung.ch as well as www.dbk.ch

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